CLAIM AMENDMENTS

1. (Currently Amended) A method of measuring availability of a network element, the method comprising the computer-implemented steps of:

determining a second availability value based on a first availability value, a first time value, a second time value that differs from the first time value, and a first operational state value; and

storing, in memory, the second availability value;

wherein determining the second availability value further comprises:

determining a dividend based on the first availability value, the first time value, the second time value, and the first operational state value; and

dividing the dividend by the second time value;

wherein the first availability value indicates the availability of the network element at the first time value;

wherein the second availability value indicates the availability of the network element at the second time value; and

wherein the first time value indicates a first time that is earlier than a second time indicated by the second time value;

wherein the method is performed by one or more computing devices.

2. (Canceled)

3. (Previously Presented) A method as recited in Claim 1, wherein determining the dividend further comprises the steps of:

determining a first addend based on the first availability value and the first time value;

determining a second addend based on the first operational state value, the second time value, and the first time value; and

adding the first addend and the second addend.

4. (Original) A method as recited in Claim 3, wherein determining the first addend further comprises multiplying the first availability value and the first time value.

5. (Original) A method as recited in Claim 3, wherein determining the second addend further comprises the steps of:

determining a multiplicand based on the second time value and the first time value; and

multiplying the multiplicand and the first operational state value.

6. (Original) A method as recited in Claim 5, wherein determining the multiplicand further comprises the step of subtracting the first time value from the second time value.

7. (Original) A method as recited in Claim 1, further comprising the steps of:

determining a third availability value based on the second availability value, the second time value, a third time value that differs from the second time value, and a second operational state value; and

storing the third availability value.

8. (Original) A method as recited in Claim 1, wherein determining the second availability value further comprises the steps of:

detecting a command; and

in response to detecting the command, determining a third availability value based on the second availability value, the second time value, a third time value that differs from the second time value, and a second operational state value.

9. (Original) A method as recited in Claim 1, further comprising the steps of:

detecting an event while a current state is a first state that is in a first state cluster;

in response to detecting the event, selecting, based on the current state and a type of the event, a second state that is in a second state cluster;

determining whether the first state and the second state are in different state clusters; and

in response to determining that the first state and the second state are in different state clusters, determining a third availability value based on the second availability

value, the second time value, a third time value that differs from the second time value, and a second operational state value that differs from the first operational state value.

10. (Original) A method as recited in Claim 1, further comprising the steps of:
determining whether the second availability value is less than a lowest recorded availability value; and
if the second availability value is less than the lowest recorded availability value, then storing the second availability value as the lowest recorded availability value.

11. (Original) A method as recited in Claim 1, further comprising the steps of:
comparing the second availability value with the first availability value;
based on the comparing, selecting, from among a plurality of trend indicators, a particular trend indicator; and
storing the particular trend indicator.

12. (Original) A method as recited in Claim 11, wherein selecting the particular trend indicator further comprises the steps of:
selecting a first trend indicator if the first availability value is less than the second availability value;
selecting a second trend indicator if the first availability value is equal to the second availability value; and
selecting a third trend indicator if the first availability value is greater than the second availability value;
wherein the first, second, and third trend indicators differ from each other.

13. (Currently Amended) A method of measuring availability of a network element, the method comprising the computer-implemented steps of:
determining a second availability value based on a first availability value, a first time value, a second time value that differs from the first time value, and a first operational state value;
storing, in memory, the second availability value;

determining a third availability value based on the first availability value, the second availability value, and a weight value; and

storing, in the memory, the third availability value;

wherein the first availability value indicates the availability of the network element at the first time value;

wherein the second availability value indicates the availability of the network element at the second time value;

wherein the third availability value indicates the availability of the network element at the third time value;

wherein the first time value indicates a first time that is earlier than a second time indicated by the second time value; and

wherein the second time is earlier than a third time indicated by the third time value; wherein the method is performed by one or more computing devices.

14. (Original) A method as recited in Claim 13, wherein determining the third availability value further comprises the steps of:

determining a dividend based on the first availability value, the second availability value, and the weight value;

determining a divisor based on the weight value; and

dividing the dividend by the divisor.

15. (Original) A method as recited in Claim 14, wherein determining the dividend further comprises the steps of:

determining an addend based on the second availability value and the weight value; and;

adding the addend and the first availability value.

16. (Original) A method as recited in Claim 15, wherein determining the addend further comprises the step of multiplying the second availability value and the weight value.

17. (Original) A method as recited in Claim 13, further comprising the step of:

determining the weight value based on the difference between the first time value and the second time value.

18. (Original) A method as recited in Claim 13, further comprising the step of:
determining the weight value based on a type of event.

19. (Original) A method as recited in Claim 13, further comprising the step of:
determining the weight value based on a type of the network element.

20. (Currently Amended) A method of measuring availability of a network element, the method comprising the computer-implemented steps of:
detecting an event while a current state is a first state that is in a first state cluster;
in response to detecting the event, selecting, based on the current state and a type of the event, a second state that is in a second state cluster;
determining whether the first state and the second state are in different state clusters; and
in response to determining that the first state and the second state are in different state clusters, performing the steps of:
multiplying a current availability value and a current time value to produce a first addend;
subtracting the current time value from a new time value to produce a multiplicand;
multiplying the multiplicand and an operational state value to produce a second addend;
adding the first addend and the second addend to produce a dividend;
dividing the dividend by the new time value to produce a new availability value;
setting the current availability value equal to the new availability value;
setting the current time value equal to the new time value; and
storing, in memory, the new availability value;
wherein the current availability value indicates the availability of the network element at the current time value;

wherein the new availability value indicates the availability of the network element at the new time value; and

wherein the current time value indicates a first time that is earlier than a second time indicated by the new time value;

wherein the method is performed by one or more computing devices.

21. (Previously Presented) A method as recited in Claim 20, wherein the new time value is equal to the amount of time between an initializing of the network element and the detecting of the event.

22. (Original) A method as recited in Claim 20, further comprising the step of determining the operational state value based on which particular state cluster among a plurality of state clusters contains the first state.

23. (Original) A method as recited in Claim 20, further comprising the step of setting the current state equal to the second state.

24. (Previously Presented) A computer-readable storage medium storing one or more sequences of instructions for measuring availability of a network element, which instructions, when executed by one or more processors, cause the one or more processors to carry out the steps of:

determining a second availability value based on a first availability value, a first time value, a second time value that differs from the first time value, and a first operational state value; and

storing, in memory, the second availability value;

wherein determining the second availability value further comprises:

determining a dividend based on the first availability value, the first time value, the second time value, and the first operational state value; and

dividing the dividend by the second time value;

wherein the first availability value indicates the availability of the network element at the first time value;

wherein the second availability value indicates the availability of the network element

at the second time value; and

wherein the first time value indicates a first time that is earlier than a second time indicated by the second time value.

25. (Canceled)

26. (Previously Presented) A computer-readable storage medium as recited in Claim 24, wherein determining the dividend further comprises the steps of:

determining a first addend based on the first availability value and the first time value;

determining a second addend based on the first operational state value, the second time value, and the first time value; and

adding the first addend and the second addend.

27. (Previously Presented) A computer-readable storage medium as recited in Claim 26, wherein determining the first addend further comprises multiplying the first availability value and the first time value.

28. (Previously Presented) A computer-readable storage medium as recited in Claim 26, wherein determining the second addend further comprises the steps of:

determining a multiplicand based on the second time value and the first time value; and

multiplying the multiplicand and the first operational state value.

29. (Previously Presented) A computer-readable storage medium as recited in Claim 28, wherein determining the multiplicand further comprises the step of subtracting the first time value from the second time value.

30. (Previously Presented) A computer-readable storage medium as recited in Claim 24, further comprising instructions for performing the steps of:

determining a third availability value based on the second availability value, the second time value, a third time value that differs from the second time value,

and a second operational state value; and

storing the third availability value.

31. (Previously Presented) A computer-readable storage medium as recited in Claim 24, wherein determining the second availability value further comprises the steps of:

detecting a command; and

in response to detecting the command, determining a third availability value based on the second availability value, the second time value, a third time value that differs from the second time value, and a second operational state value.

32. (Previously Presented) A computer-readable storage medium as recited in Claim 24, further comprising instructions for performing the steps of:

detecting an event while a current state is a first state that is in a first state cluster;

in response to detecting the event, selecting, based on the current state and a type of the event, a second state that is in a second state cluster;

determining whether the first state and the second state are in different state clusters; and

in response to determining that the first state and the second state are in different state clusters, determining a third availability value based on the second availability value, the second time value, a third time value that differs from the second time value, and a second operational state value that differs from the first operational state value.

33. (Previously Presented) A computer-readable storage medium as recited in Claim 24, further comprising instructions for performing the steps of:

determining whether the second availability value is less than a lowest recorded availability value; and

if the second availability value is less than the lowest recorded availability value, then storing the second availability value as the lowest recorded availability value.

34. (Previously Presented) A computer-readable storage medium as recited in

Claim 24, further comprising instructions for performing the steps of:

comparing the second availability value with the first availability value;

based on the comparing, selecting, from among a plurality of trend indicators, a particular trend indicator; and

storing the particular trend indicator.

35. (Previously Presented) A computer-readable storage medium as recited in Claim 34, wherein selecting the particular trend indicator further comprises the steps of:

selecting a first trend indicator if the first availability value is less than the second availability value;

selecting a second trend indicator if the first availability value is equal to the second availability value; and

selecting a third trend indicator if the first availability value is greater than the second availability value;

wherein the first, second, and third trend indicators differ from each other.

36. (Previously Presented) A computer-readable storage medium storing one or more sequences of instructions for measuring availability of a network element, which instructions, when executed by one or more processors, cause the one or more processors to carry out:

determining a second availability value based on a first availability value, a first time value, a second time value that differs from the first time value, and a first operational state value;

storing, in memory, the second availability value;

determining a third availability value based on the first availability value, the second availability value, and a weight value; and

storing, in the memory, the third availability value;

wherein the first availability value indicates the availability of the network element at the first time value;

wherein the at the second time value;

wherein the third availability value indicates the availability of the network element at

the third time value;

wherein the first time value indicates a first time that is earlier than a second time indicated by the second time value; and

wherein the second time is earlier than a third time indicated by the third time value.

37. (Previously Presented) A computer-readable storage medium as recited in Claim 36, wherein determining the third availability value further comprises the steps of:

determining a dividend based on the first availability value, the second availability value, and the weight value;

determining a divisor based on the weight value; and

dividing the dividend by the divisor.

38. (Previously Presented) A computer-readable storage medium as recited in Claim 37, wherein determining the dividend further comprises the steps of:

determining an addend based on the second availability value and the weight value; and;

adding the addend and the first availability value.

39. (Previously Presented) A computer-readable storage medium as recited in Claim 38, wherein determining the addend further comprises the step of multiplying the second availability value and the weight value.

40. (Previously Presented) A computer-readable storage medium as recited in Claim 36, further comprising instructions for performing the step of:

determining the weight value based on the difference between the first time value and the second time value.

41. (Previously Presented) A computer-readable storage medium as recited in Claim 36, further comprising instructions for performing the step of:

determining the weight value based on a type of event.

42. (Previously Presented) A computer-readable storage medium as recited in Claim 36, further comprising instructions for performing the step of:
determining the weight value based on a type of the network element.

43. (Previously Presented) An apparatus for measuring availability of a network element, comprising:
one or more processors;
means for determining a second availability value based on a first availability value, a first time value, a second time value that differs from the first time value, and a first operational state value; and
means for storing, in memory, the second availability value;
wherein the means for determining the second availability value further comprises:
means for determining a dividend based on the first availability value, the first time value, the second time value, and the first operational state value; and
means for dividing the dividend by the second time value;
wherein the first availability value indicates the availability of the network element at the first time value;
wherein the second availability value indicates the availability of the network element at the second time value; and
wherein the first time value indicates a first time that is earlier than a second time indicated by the second time value.

44. (Previously Presented) An apparatus for measuring availability of a network element, comprising:
a network interface that is coupled to a data network for receiving one or more packet flows therefrom;
a processor;
one or more stored sequences of instructions which, when executed by the processor, cause the processor to carry out the steps of:
determining a second availability value based on a first availability value, a

first time value, a second time value that differs from the first time value, and a first operational state value; and

storing, in memory, the second availability value;

wherein determining the second availability value further comprises the steps of:

determining a dividend based on the first availability value, the first time value, the second time value, and the first operational state value; and

dividing the dividend by the second time value;

wherein the first availability value indicates the availability of the network element at the first time value;

wherein the second availability value indicates the availability of the network element at the second time value; and

wherein the first time value indicates a first time that is earlier than a second time indicated by the second time value.

45. (Previously Presented) An apparatus as recited in Claim 44, wherein the one or more stored sequences of instructions further comprises instructions which, when executed by the processor, cause the processor to carry out:

determining a third availability value based on the second availability value, the second time value, a third time value that differs from the second time value, and a second operational state value; and

storing the third availability value.

46. (Previously Presented) An apparatus as recited in Claim 44, wherein determining the second availability value further comprises:

detecting a command; and

in response to detecting the command, determining a third availability value based on the second availability value, the second time value, a third time value that differs from the second time value, and a second operational state value.

47. (Previously Presented) An apparatus as recited in Claim 44, wherein the one or

more stored sequences of instructions further comprises instructions which, when executed by the processor, cause the processor to carry out:

detecting an event while a current state is a first state that is in a first state cluster;

in response to detecting the event, selecting, based on the current state and a type of the event, a second state that is in a second state cluster;

determining whether the first state and the second state are in different state clusters; and

in response to determining that the first state and the second state are in different state clusters, determining a third availability value based on the second availability value, the second time value, a third time value that differs from the second time value, and a second operational state value that differs from the first operational state value.

48. (Previously Presented) An apparatus as recited in Claim 44, wherein the one or more stored sequences of instructions further comprises instructions which, when executed by the processor, cause the processor to carry out:

determining whether the second availability value is less than a lowest recorded availability value; and

if the second availability value is less than the lowest recorded availability value, then storing the second availability value as the lowest recorded availability value.

49. (Previously Presented) An apparatus as recited in Claim 44, wherein the one or more stored sequences of instructions further comprises instructions which, when executed by the processor, cause the processor to carry out:

comparing the second availability value with the first availability value;

based on the comparing, selecting, from among a plurality of trend indicators, a particular trend indicator; and

storing the particular trend indicator.

50. (Previously Presented) An apparatus as recited in Claim 44, wherein selecting the particular trend indicator further comprises:

selecting a first trend indicator if the first availability value is less than the second

availability value;

selecting a second trend indicator if the first availability value is equal to the second availability value; and

selecting a third trend indicator if the first availability value is greater than the second availability value;

wherein the first, second, and third trend indicators differ from each other.

51. (Previously Presented) An apparatus for measuring availability of a network element, comprising:

a network interface that is coupled to a data network for receiving one or more packet flows therefrom;

a processor;

one or more stored sequences of instructions which, when executed by the processor, cause the processor to carry out:

determining a second availability value based on a first availability value, a first time value, a second time value that differs from the first time value, and a first operational state value;

storing, in memory, the second availability value;

determining a third availability value based on the first availability value, the second availability value, and a weight value; and

storing, in the memory, the third availability value;

wherein the first availability value indicates the availability of the network element at the first time value;

wherein the second availability value indicates the availability of the network element at the second time value;

wherein the third availability value indicates the availability of the network element at the third time value;

wherein the first time value indicates a first time that is earlier than a second time indicated by the second time value; and

wherein the second time is earlier than a third time indicated by the third time value.

52. (Previously Presented) An apparatus for measuring availability of a network element, comprising:

a network interface that is coupled to a data network for receiving one or more packet flows therefrom;

a processor;

one or more stored sequences of instructions which, when executed by the processor, cause the processor to carry out:

detecting an event while a current state is a first state that is in a first state cluster;

in response to detecting the event, selecting, based on the current state and a type of the event, a second state that is in a second state cluster;

determining whether the first state and the second state are in different state clusters; and

in response to determining that the first state and the second state are in different state clusters, performing:

multiplying a current availability value and a current time value to produce a first addend;

subtracting the current time value from a new time value to produce a multiplicand;

multiplying the multiplicand and an operational state value to produce a second addend;

adding the first addend and the second addend to produce a dividend;

dividing the dividend by the new time value to produce a new availability value;

setting the current availability value equal to the new availability value;

setting the current time value equal to the new time value; and

storing, in memory, the new availability value;

wherein the current availability value indicates the availability of the network element at the current time value;

wherein the new availability value indicates the availability of the

network element at the new time value; and

wherein the current time value indicates a first time that is earlier than a second time indicated by the new time value.

53. (Previously Presented) An apparatus for measuring availability of a network element, comprising:

one or more processors;

means for detecting an event while a current state is a first state that is in a first state cluster;

means for selecting, in response to detecting the event, based on the current state and a type of the event, a second state that is in a second state cluster;

means for determining whether the first state and the second state are in different state clusters;

means for multiplying a current availability value and a current time value to produce a first addend;

means for subtracting the current time value from a new time value to produce a multiplicand;

means for multiplying the multiplicand and an operational state value to produce a second addend;

means for adding the first addend and the second addend to produce a dividend;

means for dividing the dividend by the new time value to produce a new availability value;

means for setting the current availability value equal to the new availability value;

means for setting the current time value equal to the new time value; and

means for storing, in memory, the new availability value;

wherein the current availability value indicates the availability of the network element at the current time value;

wherein the new availability value indicates the availability of the network element at the new time value; and

wherein the current time value indicates a first time that is earlier than a second time indicated by the new time value.

54. (Previously Presented) An apparatus for measuring availability of a network element, comprising:

one or more processors;

means for determining a second availability value based on a first availability value, a first time value, a second time value that differs from the first time value, and a first operational state value;

means for storing the second availability value;

means for determining a third availability value based on the first availability value, the second availability value, and a weight value; and

means for storing, in memory, the third availability value;

wherein the first availability value indicates the availability of the network element at the first time value;

wherein the second availability value indicates the availability of the network element at the second time value;

wherein the third availability value indicates the availability of the network element at the third time value;

wherein the first time value indicates a first time that is earlier than a second time indicated by the second time value; and

wherein the second time is earlier than a third time indicated by the third time value.